Gas Sensor

In 1983, after 12 years as an engineer with Martin Marietta Corporation, Ralph M. Mindock founded High Technology Sensors, Inc. (HTS), Longwood, Florida to develop and market microelectronics products.

In the photo below, an HTS technician is assembling a sensor under a microscope, using pure gold wire many times finer than human hair to solder connections. At lower right, company president Mindock holds a finished carbon dioxide detector, part of the HTS Model SS-250 miniature gas sensor designed to measure carbon dioxide concentrations.

The SS-250 uses a patented semiconductor optical source that efficiently creates infrared radiation, which is focused through an airway on a detector. Carbon dioxide passing through the airway absorbs the radiation, causing the detector to generate a signal. The small size—roughly 2 x 2 x 2 inches—and low power requirements of the SS-250 make it attractive for incorporation in a variety of medical instruments.

The experience of Ralph Mindock and HTS exemplifies the benefits available to industry through a network of NASA assistance centers that provide information retrieval services and technical help. In this case, the assistance was provided by the Southern Technology Applications Center, (STAC), Alachua, Florida.

Mindock met a STAC official at a trade show, learned of STAC's literature searches and other services, and began to use STAC regularly as an information resource. STAC conducted searches for HTS in several areas, including investigation of the market for gas and vapor detection sensors. STAC also provided extensive information helpful to HTS in preparing proposals for Small Business Innovation Research (SBIR) awards.

Confirming that STAC saved HTS considerable time and money, Mindock says: "The search on sensor markets gave us data to use in the long range business plan, including an estimate of total market, our potential market penetration, and our competition." Mindock adds that a literature search can make or break an SBIR proposal. "The search results are much more complete than I could collect manually. STAC goes further back into the literature and locates sources I didn't know existed."